

Application No.: 09/853217

Case No.: 55944US002

**Remarks**

Claims 1-22 are pending in this application. Claims 1-17 stand rejected for obviousness and claims 18-22 have been withdrawn from consideration. By this response, claim 1 has been amended and claims 16 and 17 have been canceled. Applicants respectfully request reconsideration of the rejected claims.

**Claim Amendment**

Claim 1 has been amended to recite that the polymerizable composition is polymerized heterogeneously in a single phase. Support for this amendment is found, for example, in original claims 16 and 17. No new matter is added by this amendment.

**§ 103 Rejection**

Claims 1-17 stand rejected under 35 USC § 103(a) as being unpatentable over Weiss et al (WO 00/04055) in view of Loda (U.S. Patent No. 4,163,172), Mukohyama et al (U.S. Patent No. 4,886,840) and Botman et al (Nuclear Instruments and Methods in Physics Research B 139). This is the only rejection remaining in this case. Applicants respectfully traverse this rejection in view of the amended claims.

In a previous reply dated January 10, 2005, Applicants had pointed out that none of the cited references teach or suggest that heterogeneous polymerization of a single-phase system can be achieved by irradiating the composition with a frequency of pulses above about 500 Hz. Since there is no precedence in the prior art for this unexpected and surprising result, Applicants argued that the claimed invention is patentable over the cited references. In response, the Examiner stated that this argument was not persuasive, because Loda teaches that a "high dose rate of very short electron beam pulses ... elicits chemical reactions, which may be different from those produced by the impact of long pulses or continuous radiation" (see Office Action dated February 14, 2005). The Examiner, therefore, maintains that the fact that the manner in which the dose is delivered can effect the polymerization process was well known in the art. However, just because Loda indicates that varying the dose rate may result in different types of "chemical reactions" does not mean that one of skill in the art would have expected or found it obvious that a combination of high dose rate (e.g., above about 500Hz) with a low dose per pulse (e.g., about 10 to about 90 Gy) results in the

Application No.: 09/853217

Case No.: 55944US002

heterogeneous mode of polymerization. Nothing in Loda teaches or suggests that the combination of dose rate and dose per pulse recited in the present claims would be desirable, much less that it would result in heterogeneous polymerization in a single phase. On the contrary, the Loda reference actually teaches away from the present invention when it notes that a high dose rate of very short electron beam pulses elicits "different" chemical reactions. When taken in context, it is clear that Loda considers "different" to be undesirable. Specifically, Loda states the "inability to produce pulses of long duration" is a limitation of the standard cold cathode (col. 1, lines 8-43). Thus, Loda identifies this as a drawback of conventional cold cathodes, making them of "limited usefulness for certain processes" (col. 1, line 50-53). Consequently, it is an object of the Loda invention to "to provide a cold cathode electron gun capable of providing irradiation at a uniform low dose rate." (col. 2, lines 13-16, emphasis added). By emphasizing the drawbacks and undesirable effects of a high dose rate, Loda clearly teaches away from the present invention. See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983); MPEP 2141.02 ("A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.")

The Examiner has noted that the feature of heterogeneous polymerization in a single phase was not recited in the rejected claims. Applicants have now amended the claims to recite this mode of polymerization. In view of this amendment and the remarks above, Applicants respectfully submit that the rejection of claims 1-17 under 35 USC § 103(a) has been overcome and should be withdrawn.

Application No.: 09/853217

Case No.: 55944US002

**Conclusion**

In view of the foregoing amendment and remarks, Applicants respectfully submit that the application is in condition for allowance. Reconsideration of the application is requested.

All communications in this case should be direct to the undersigned. If the Examiner believes a telephone discussion would be helpful to resolve any of the outstanding issue in this case, the Examiner is encouraged to call the undersigned at the number listed below.

Respectfully submitted,

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Date

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